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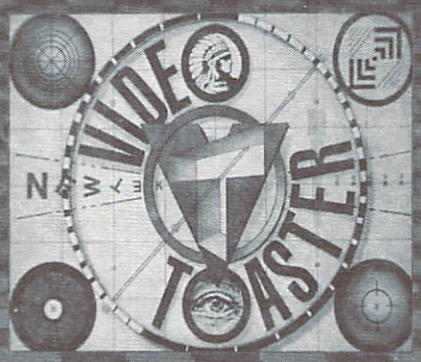

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.info WrapUp

CHIP INVENTOR AWARDED PATENT

Inventor Gilbert Hyatt has been awarded a patent for his 1968 invention of the single-chip computer. The patent appears to cover chips in everything from pocket calculators to cars. Experts disagree whether or not the patent will apply to microprocessor chips and all the personal computers based on them. All this may spell big trouble for the computer industry. Hyatt hopes to negotiate licences under which electronics companies would pay him royalties for using his invention, and says he isn't bitter about seeing his invention used for over twenty years without receiving a penny from it. He also says that he will not seek retroactive royalty payments. Just to quantify the impact on the computer industry, a 0.5 percent royalty on the yearly revenue of Intel alone would yield about $15 million.

ENCHANTED REALMS

Edited by Chuck Miller and published bi-monthly by Digital Expressions, *Enchanted Realms* is a new journal-style newsletter-with-disk for Amiga adventure fans. The *Enchanted Realms* newsletter features news, in-depth reviews, walk-throughs, and game hints all devoted exclusively to new and classic Amiga adventures and quests. The disk includes PD adventures, gorgeous fantasy artwork, maps, original music, and sound effects. Both newsletter and disk are well-presented, attention-grabbing, and fun. If you count wandering around digital dungeons and fighting off hungry orcs among your favorite pastimes, check out *Enchanted Realms*. Six issues with disk will run you $49.95. For more information write: Digital Expressions, P.O. Box 33656, Cleveland, OH 44133.

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2/28/90	970,500	8 1/2	7 7/8	8 1/4
3/30/90	1,275,300	9 1/4	8 1/8	8 5/8
4/30/90	1,613,900	8 1/2	6 7/8	7
5/31/90	3,178,600	8 1/8	6 3/8	8 1/8
6/29/90	2,576,000	9 7/8	7 3/8	7 7/8
7/31/90	1,160,300	8 1/8	6 3/4	6 3/4
8/31/90	2,091,000	6 7/8	4 1/2	5 5/8

The chart above shows the monthly price history of Commodore stock from the start of the year (its 1990 high) to the end of August (the 1990 low, at presstime). Though investors haven't exactly started jumping out of windows, let's hope we see a turn-around soon.

GAME TIPS

Here are more great Amiga game tips for subscribers only!

Return of the Jedi: On the high score table, enter *Darth Vader.* From now on pressing **F2** will skip a stage.

Xybots: Play the game all the way until your last man. If you were good enough to put your your name on the high score table, enter *ALF.* Now you can start the game again with unlimited energy and all the extras.

Chaos Strikes Back (Dungeon Master II): Find a dragon. Cast the spell *MON ZO GOR SAR.* Press **ESC** to pause the game. Hold **ALT** and type *LORD LIBRASULUS SMITHES THEE DOWN.* Unpause, and kill the dragon. It will leave behind a firestaff, and your party will be invincible.

Xenon II: What and where to buy - LEVEL 1: First shop buy Health, Super Nashwan. Second shop sell Rear Shot, buy Double Shot, Side Shot. LEVEL 2: First shop buy Side Shot. Second shop sell Side Shot. LEVEL 3: First shop buy Health, Rear Shot. Second shop sell all Rear Shot, buy Side Shot, Laser, Power Up. LEVEL 4: First shop sell Rear Shop, sell Side Shot. Try to stick with your best weapon, and end up with 2 x Cannons, 2 x Lasers and either Side Shot or Rear Shot.

.info WrapUp

THE HISTORY OF COMPUTERS:
INSTALLMENT #003

This is the third in a series of short essays illuminating the origins and history of common computer terms, techniques, and processes.

It's not unusual these days to see a happy group of gaily dressed office workers heading for the office cheerily singing "I/O, I/O, It's off to work we go!" But do they really know what they're singing about? Just what the heck is "I/O" anyway?

Well, as some of the brighter office help might be able to tell you - the office boys and secretaries for sure, though probably not the executives - "I/O" stands for "Inside/Out" and refers to the process of getting information into a computer, then trying to get it back out again. How to do this safely, reliably, and effectively has been a problem since the early days of computing. It still is.

The very first computer, the Sperry Euni-Vac, was essentially a "black box" with 17 different attachments and accessories, including a handy crevice tool. But without any way to get questions into the box, or any way to get answers back out, it was of limited interest even to computer scientists. For months, its creators debated over what form the primitive computer's I/O should take. At first, they tried rows of toggle switches and banks of blinking lights, which for some reason would only spell out obscene words while at the same time inexplicably causing the machine's programmers to giggle uncontrollably. Another early trial involved wiring the brains of monkeys directly into the computer circuitry, and having them type questions and answers on standard typewriters. Unfortunately, the monkeys (leftovers from a philosophy project that had lost its funding) could only type the complete works of Shakespeare, so the project had to be abandoned.

While the computer scientists met and debated, Bryce Weebles, a junior tech assistant 3rd class, found an abandoned teletype-writer in a dusty corner of the basement of the physics building. With the assistance of some Ham radio operators he knew from the audio-visual squad, he got it interfaced to the Euni-Vac over a long Memorial Day weekend. The top-heavy "Bardot" code it used caused some difficulties, as it required lots of extra support, but these problems were quickly overcome. By the time the computer scientists came down out of their meetings in the ivory tower, Bryce already had the machine printing ASCII nudes and playing a crude all-text version of "Star Trek."

That primitive computer I/O mechanism, the teletype, has evolved into today's diverse, confusing, and highly profitable melange of sophisticated interface equipment. Among the input units you'll find plugged into a modern computer are the KEYBOARD, used for mistyping information and inflicting carpal tunnel syndrome, the MOUSE, for highlighting errors so they can be seen better and for selecting incorrect menu items, and the GRAPHICS TABLET, which not only lets non-artists trace graphics onto the computer screen, but also doubles as a handy lunch tray. For output, there's the DOT-MATRIX PRINTER, a graphics technology based on numbered connect-the-dot pictures, and the VDT (Very Dumb Terminal) or CRT (Color Radiation Tube), which is basically a TV without the sitcoms, a concept not unlike sex without a partner.

Operating millions of these units day to day, from coast to coast, are an army of former clerks, accountants, and typists, freed from the dehumanizing drudgery of endless filing, figuring, and typing to undertake the high-tech challenges of endless data entry, spreadsheeting, and wordprocessing. And many have never developed a single radiation-induced tumor in the process.

Of course, in between the inputting of information to the inside of a computer and the outputting of it to the outside again, there is the interesting process of information processing, which we'll cover in a later installment in this series.